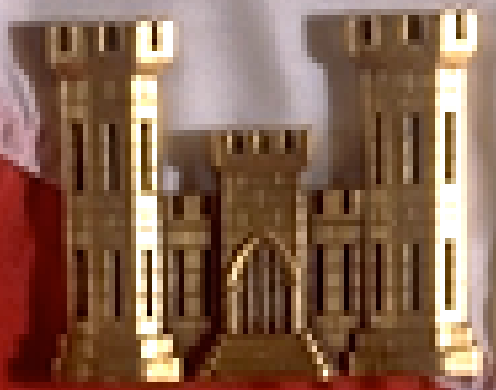
# Engineers - Relevant, Ready, Responsive, Reliable

## Fourth Annual Community Sustainability Conference



MG Ronald L. Johnson
Deputy Chief of Engineers and
Deputy Commander, U.S. Army
Corps of Engineers

# Agenda

- What Do You Get Out of This?
- The Burning Platform
- Sustainable Project Rating Tool (SPiRiT)
- Leadership in Energy and Environmental Design (LEED)
- Conclusion

# What Do You Get Out of This ?

- What is the difference between SPiRiT and LEED?
- How do successful teams use SPiRiT during MILCON, RCI & AFH projects?
- How do I find out more about LEED & SDD?

# Burning Platform

- Buildings and Environmental Impact
- Benefits of Sustainable Design and Construction

# Environmental Impact of Buildings*

- 65.2% of total U.S. electricity consumption
- > 36% of total U.S. primary energy use
- 30% of total U.S. greenhouse gas emissions
- 136 million tons of construction and demolition waste in the U.S. (approx. 2.8 lbs/person/day)
- 12% of potable water in the U.S.
- 40% (3 billion tons annually) of raw materials use globally

* Commercial and residential *(Source: USGBC)*

# Benefits of Green Building

Environmental Benefits

- Reduce the impacts of natural resource consumption

Economic Benefits

- Improve the bottom line
- Save energy

Health and Safety Benefits

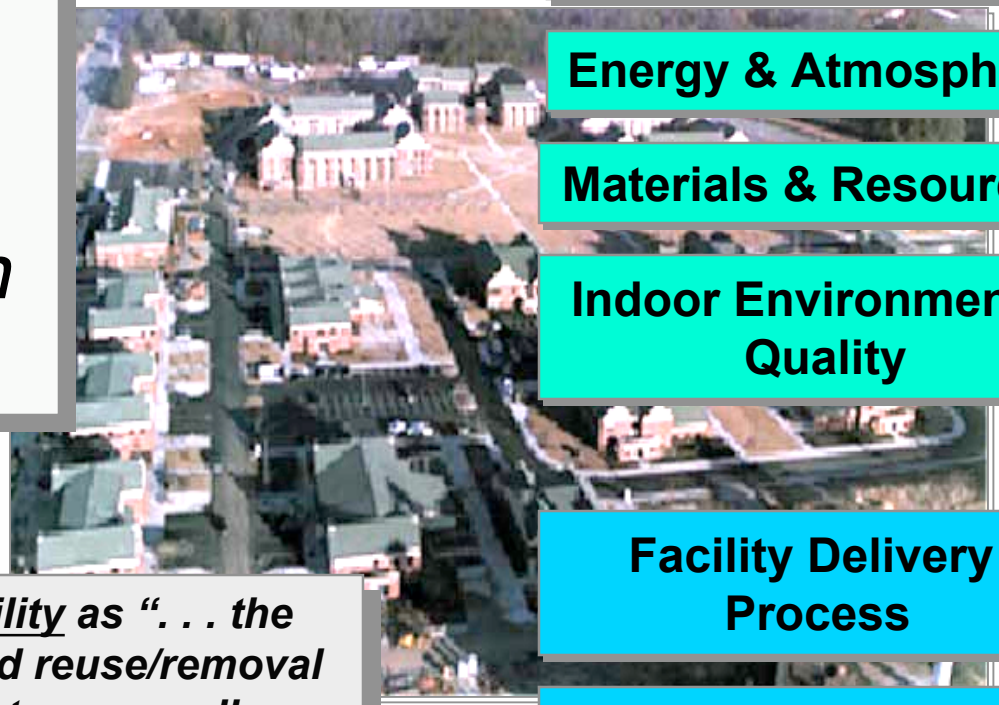
- Enhance occupant comfort and health

Community Benefits

- Minimize strain on local infrastructures and improve quality of life

# Sustainable Project Rating Tool (SPiRiT)

*SPiRiT- A self-assessment tool to evaluate sustainability of all facility construction and repair projects*



- Water Efficiency
- Sustainable Sites
- Energy & Atmosphere
- Materials & Resources
- Indoor Environmental Quality
- Facility Delivery Process
- Current Mission
- Future Mission

***ETL 1110-3-491 defines sustainability as ". . . the design, construction, operation and reuse/removal of the built environment (infrastructure as well as buildings) in an environmentally and energy efficient manner. . . meeting the needs of today without compromising the ability of future generations to meet their needs."***

# SPiRiT Scoring

| | | |
|---|---|---|
| ▪ Sustainable Sites: | 20 | Green Results |
| ▪ Water Efficiency: | 5 | |
| ▪ Energy and Atmosphere: | 28 | |
| ▪ Materials and Resources: | 13 | |
| ▪ Indoor Environmental Quality: | 17 | |
| ▪ Facility Delivery Process: | 7 | Life-Cycle Synergy |
| ▪ Current Mission: | 6 | |
| ▪ Future Mission: | 4 | |
| ▪ TOTAL | 100 | |

# SPiRiT Rating

- Points: 100 Possible
- Score at least the following number to obtain the indicated rating:
  - _ 75 - 100 Platinum
  - _ 50 - 74 Gold
  - _ 35 - 49 Silver
  - _ 25 - 34 Bronze
- Beginning in FY06 Gold is minimum expected score.

# LEED

GREEN BUILDING RATING SYSTEM

## Leadership in Energy & Environmental Design–

A leading-edge system for designing, constructing, operating and certifying the world's greenest buildings.

# LEED Products

LEED covers many different types of buildings and construction. These are covered under the following LEED products:

**LEED-NC**: LEED for New Construction and Major Renovations /Additions
(for commercial and institutional buildings, released in 2000)

**LEED-EB**: LEED for Existing Buildings
(public release: Winter 2004)

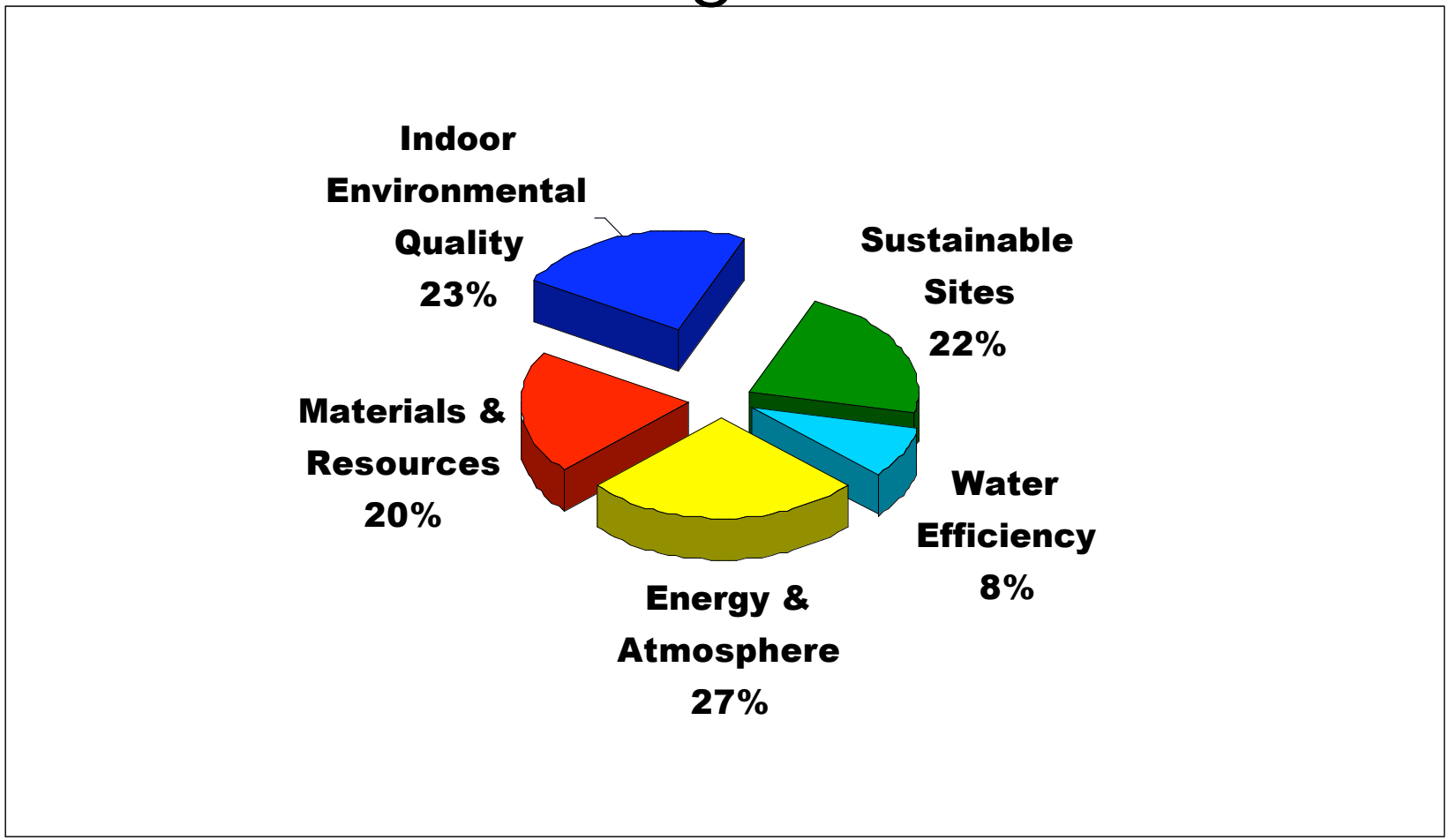
**LEED-CI**: LEED for Commercial Interiors
(public release: Winter 2004)

**LEED-CS**: LEED for Core and Shell
(public release: 2005)

**LEED-H**: LEED for Homes
(public release: 2006)

# LEED-NC Point Distribution

Five LEED credit categories



# Technical Overview of LEED

- Green building rating system, currently for commercial and institutional new construction and major renovation.
- Existing, proven technologies
- Evaluates and recognizes performance in accepted green design categories
- LEED product development includes existing buildings, commercial interiors, multiple buildings, core & shell, and homes

# Technical Overview of LEED

- Whole-building approach encourages and guides a collaborative, integrated design and construction process
- Optimizes environmental and economic factors
- Four levels of LEED-NC certification:

| | |
|---|---|
| Certified Level | 26 - 32 points |
| Silver Level | 33 - 38 points |
| Gold Level | 39 - 51 points |
| Platinum Level | 52+ points (69 possible) |

# LEED-EB (Existing Buildings)

- The LEED Rating System for Existing Buildings addresses:
  - whole-building cleaning and maintenance issues including chemical use
  - ongoing indoor air quality
  - energy efficiency
  - water efficiency
  - recycling programs and facilities
  - exterior maintenance programs, and
  - systems upgrades to meet green building energy, water, IAQ, and lighting performance standards

# LEED-EB Pilot Projects:

- Building 2019 Fort Lewis, WA
- Pentagon Renovation Wedge 2

Green Roof on the Pentagon Remote Delivery Facility

# LEED - Homes

The LEED- for Homes program is being developed by the USGBC with input from local and national stakeholder groups. It is a voluntary initiative promoting the transformation of the mainstream home building industry towards more sustainable practices. It will provide a much-needed tool for homebuilders, homeowners, and local governments for building environmentally sound, healthy, and resource-efficient places to live.


Think Different